



U.S. FISH AND WILDLIFE SERVICE TRANSMITTAL SHEET

PART 100 ESM 1	SUBJECT Ecological Services Manual- Implementation of Habitat Evaluation Procedures, Chapter 1. General	RELEASE NUMBER 3-80
FOR FURTHER INFORMATION CONTACT Division of Eco- logical Services, 343-5197		DATE August 14, 1980

EXPLANATION OF MATERIAL TRANSMITTED:

Enclosed is the third release of the new Ecological Services Manual. It contains the following part:

100 ESM Implementation of Habitat Evaluation Procedures,
Chapter 1, General

This manual release is to be filed in your "Habitat Evaluation Procedures" binder and replaces a memorandum from the Director, FWS to Regional Directors, dated August 13, 1976.

Chapter 2, Quality Control, of this manual part is being developed and will be released at a later date.

Acting Associate Director, Environment

FILING INSTRUCTIONS

Remove: Nothing.

Insert New Material: 100 ESM 1 should be inserted in front of ESM 102 in the Habitat Evaluation Procedures Binder.

Transmittal Memorandum: File behind the Transmittal Memorandums 1-80 and 2-80 which should follow ESM 104.

Chapter 1. General

1.1 Background. In 1970, a task force, composed of representatives from the Bureau of Sport Fisheries and Wildlife, now the U.S. Fish and Wildlife Service (FWS), State conservation agencies, and private conservation groups, prepared a comprehensive list of recommendations for Federal, State, and private participation in water resource planning. This document, the Action Report (BSFW et al, 1971), included the recommendation that FWS develop a non-monetary evaluation procedure to quantify fish and wildlife resources.

A system developed by Daniels and Lemaire (1974) was selected as the system that most closely fits the needs of the Service. This system, modified to meet the requirements of the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources (WRC, 1973), was adopted as that of the Service, and was published as the Ecological Planning and Evaluation Procedures (FWS, 1974).

The evaluation procedures portion of that document was later separated out, refined, and published as the Habitat Evaluation Procedures (FWS, 1976). A 1980 revision of the 1976 edition has been published (102 ESM and 104 ESM) and is being used as prescribed in the Policy section of this manual part (100 ESM 1.4).

The Habitat Evaluation Procedures (HEP) are a habitat-based approach for assessing environmental impacts of proposed water and land resource development projects. The method can be used to document the quality and quantity of available habitat for selected wildlife species. The procedures provide information for two general types of wildlife habitat comparisons: 1) the relative value of different areas at the same point in time; and 2) the relative value of the same areas at future points in time. By combining the two types of comparisons, the impact of proposed or anticipated land and water use changes on wildlife habitat can be quantified.

1.2 Purpose. The purpose of this manual part and the succeeding related parts (101 ESM, 102 ESM, 103 ESM, and 104 ESM) is to provide policy, standards, and guidance for application and continued refinement of the Habitat Evaluation Procedures.

1.3 Scope. The primary use of these procedures will be to assess the impacts of proposed major water resource development projects of the U.S. Army Corps of Engineers (Corps) and Water and Power Resources Service (WPRS). The Habitat Evaluation Procedures may also be used on a variety of other Federal water and land resource projects or programs, such as projects permitted or licensed by the U.S. Army Corps of Engineers (Corps), Nuclear Regulatory Commission (NRC) and Federal Energy Regulatory Commission (FERC); as well as planning studies of the Soil Conservation Service (SCS), Bureau of Land Management (BLM), and U.S. Forest Service (FS).

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In addition, HEP can be applied to the planning activities of both Federal and State agencies and by private organizations not directly covered by the Fish and Wildlife Coordination Act (FWCA), especially when the U.S. Fish and Wildlife Service is involved as a cooperating agency under the Council on Environmental Quality's Regulations, for implementing the National Environmental Policy Act (40 CFR 1500-1508).

Guidance for applying HEP in these assessments is found in several manual parts as follows:

- A. 101 ESM -- Habitat as a Basis for Environmental Assessment (unpublished). This manual part contains a discussion of the concepts of a habitat-impact assessment and guidelines for use of the Habitat Evaluation Procedures for planning purposes.
- B. 102 ESM -- Habitat Evaluation Procedures (HEP). This manual part contains the procedures, themselves -- a step-by-step application of the methodology. Also included is a description of how to use remote sensing for inventories, a list of criteria to be used in selecting evaluation species, field sampling techniques, and methods for analysing data.
- C. 103 ESM -- Standards for the Development of Habitat Suitability Index Models for Use with the Habitat Evaluation Procedures (unpublished). This manual part includes guidelines for assembling data bases, compilation of species-habitat data, construction of species-habitat models, and formatting information. This part also provides guidance for the development and construction of species-habitat evaluation criteria.
- D. 104 ESM -- Human Use and Economic Evaluation (HUEE). This manual part includes procedures for evaluating man's use of fish and wildlife resources and the dollar values of their uses. It is used in conjunction with the Habitat Evaluation Procedures.

1.4 Policy. The 1980 edition of the Habitat Evaluation Procedures will be used as follows:

A. General Application

- (1) HEP will be used as a basic tool for evaluating project impacts on fish and wildlife resources and as a basis for formulating subsequent recommendations for mitigation, including fish and wildlife resources management planning.

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- (2) The 1980 edition of HEP will be utilized on major Level C water development projects of the Corps and WPRS if planning is scheduled to begin subsequent to the publication of the 1980 edition of HEP (except as provided for in 1.4A.4 and 5 below).
- (3) The use of HEP is encouraged on a variety of other Federal water and land resource development projects and programs, such as projects permitted or licensed by the Corps, NRC and FERC, as well as planning studies of the SCS, BLM and FS.
- (4) The 1980 edition of HEP will NOT be utilized when:
 - (a) time constraints are such that the results of applying HEP would be of low quality;
 - (b) ES field biologists have not been certified in the use of the 1980 edition of HEP;
 - (c) adequate funds (transfer or otherwise) are not available;
 - (d) the project size or impacts are expected to be relatively insignificant; or
 - (e) the project is not deemed appropriate for its application.
- (5) Ongoing evaluations using the 1976 edition of HEP will continue unless a changeover to the 1980 edition is justified and negotiated with the action agency by the ES Field Office concerned. Difficulties achieving these changeovers will be referred up the established chain of command for resolution.

B. Certified Training to Use 1980 HEP

ES field biologists must receive the certified training prescribed by the Associate Director-Environment before conducting project evaluations using the 1980 HEP.

C. Interdisciplinary Planning Teams

Maximum effort will be made to conduct HEP evaluations using interdisciplinary planning teams consisting of biologists from the Fish and Wildlife Service, the Federal action agency, and the appropriate State fish and wildlife agency.

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D. Secondary Impacts

In reviewing projects or other proposals, and whenever practicable, the total impact of the development, including any part located on uplands and any secondary fish and wildlife impacts, will be evaluated and mitigation recommended, where appropriate.

E. Posted Lands and Fish and Wildlife Use Regulations

Posted lands, and Federal and State fish and wildlife use (hunting, fishing, etc.) regulations can affect the demand (man's use) and the supply of fish and wildlife resources in a project area. When using HUEE analyses, future conditions will be based on potential habitat values and human benefits regardless of land closures or fish and wildlife use regulations.

F. Endangered/Threatened Species as HEP Evaluation Species

The consideration of endangered/threatened species is prescribed in Section 7 of the Endangered Species Act of 1973, as amended; and related regulations. Thus, to avoid any possibility of confusion with the consultation requirements of Section 7 of the Endangered Species Act, no federally-listed endangered/threatened species should be used as an evaluation species in a HEP study.

G. Human Use and Economic Evaluation (HUEE)

- (1) In most cases, FWS biologists will not have sufficient background in economics to carry out a complete monetary evaluation in accordance with the Water Resources Council's procedures for evaluating the costs and benefits of Level C water projects. However, use of the Human Use and Economic Evaluation (HUEE) Procedures (104 ESM) will provide the biologist with insight as to the use of the monetary evaluation methodologies described in the WRC procedures.
- (2) The Service will provide biological baseline (supply) data, as necessary, so that the Federal action agency can perform the economic evaluation of a project. This supply data will be used by the Federal action agency to evaluate demand on fish and wildlife resources for input into the project's benefit/cost analysis. If an ES Field Office determines that it is necessary for the FWS to conduct a monetary evaluation using WRC's evaluation methods for water projects, it must rely on one of the following options:

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- (a) contract with a private consultant with expertise in economics and recreation planning;
- (b) utilize the resources of the Federal action agency being funded for planning the proposed project; and
- (c) utilize the expertise of a FWS economist. The use of this option will be limited to exceptional circumstances, subject to the availability of FWS economists and approval of the Associate Director-Environment.

H. Documentation

Each HEP and HUEE evaluation will include documentation of study objectives, assumptions, level of acceptance for HSI models and compensation objectives and goals, as appropriate. This documentation will be included as an integral part of any FWCA report based on a HEP or HUEE evaluation.

I. Revisions

No major revisions will be made to the 1980 edition of HEP until FY 1983. At that time, appropriate HEP updates may be made, based on the results of technical and institutional evaluations, field applications, and new research and development efforts. However, necessary corrections and clarifications will be made, whenever they are needed. Recommendations for corrections and clarifications should be as specific as possible and forwarded through normal channels to the Chief, Division of Ecological Services, USFWS, Washington, D.C. 20240 (See 02 ESM 1.10).

1.5 Objectives. The FWS Habitat Preservation Program Management Document outlines objectives to ensure the protection and proper management of fish and wildlife resources. The application of 1980 edition of HEP addresses the following objectives:

- A. Ensure that the environmental impacts of Federal and federally-assisted water resource development projects are identified. Ensure that recommendations for the conservation, protection, and enhancement of fish and wildlife resources are provided to the appropriate agencies and are implemented.
- B. Implement standardized procedures for evaluating project impacts, on both terrestrial and inland aquatic habitats, and for comparing alternative plans or projects developed under the National Environmental Policy Act and the Water Resource Council Principles and Standards for Planning by Fiscal Year 1984.

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1.6 Authorities

- A. Fish and Wildlife Coordination Act (48 Stat. 401, as amended 16 U.S.C. 661-667)

This Act requires that". . . wildlife conservation shall receive equal consideration and be coordinated with other features of water resource development programs. . ." The Fish and Wildlife Service and State fish and wildlife agencies shall be consulted concerning impacts on fish and wildlife resources that result from Federal water resource projects. This Act presumes the existence of evaluation procedures to carry out the consultation, investigation, and reporting requirements.

- B. Fish and Wildlife Act of 1956 (70 Stat. 119, as amended 16 U.S.C. 742a-742j)

Section 7(a) of the Act authorizes the Secretary of the Interior to: 1) develop measures for "maximum sustainable production of fish;" 2) make economic studies and recommend measures to insure stability of the domestic fisheries; 3) undertake promotional and information activities to stimulate consumption of fishery products; 4) take steps "required for the development, advancement, management, conservation, and protection of the fisheries resources;" and 5) take steps "required for the development, management, advancement, conservation, and protection of wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means."

- C. Water Resources Planning Act of 1965 (79 Stat. 244, as amended 42 U.S.C. 1962-1962a-3)

Authorized the establishment of the Principles and Standards and Procedures for Federal Participation in Water and Related Land Resource Planning and Development. Agencies are required to plan for environmental quality as well as for national economic development. Specifically, the Act requires that:

". . . Plans for the use of the Nation's water and land resources will be directed to improvement in the quality of life through contributions to the objectives of national economic development and environmental quality. The beneficial and adverse effects on each of these objectives will be displayed in separate accounts . . . Planning for the use of water and land resources in terms of these

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objectives will aid in identifying alternative courses of action and will provide the type of information needed to improve the public decisionmaking process . . ."

- D. National Environmental Policy Act 1969 (83 Stat. 852; as amended 42 U.S.C. 4321-4347)

Requires the preparation of a detailed statement on the environmental impacts of a proposed Federal action and all reasonable alternative actions. Specifically, this Act requires that:

". . . all agencies of the Federal Government shall (a) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment; (b) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by Title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations..."

1.7 Definitions. (See 102, 103 and 104 ESM.)

1.8 Responsibilities. The officials and offices listed below are responsible for the functions indicated:

- A. Associate Director-Environment. Overall responsibility for the application and further refinement of the Habitat Evaluation Procedures.
- B. Chief, Division of Ecological Services. As staff to the Associate Director-Environment, the Chief shall ensure that policies, plans, and procedures for the operational application of HEP are carried out in accordance with the goals and objectives of the Service, and specifically, the Habitat Preservation Program Management Document and related Program Advices.

The Chief has overall responsibility for identifying future research and development needs and products, and managing the operational application of HEP and Washington-level coordination of joint planning efforts, policy interaction and applications with other Federal agencies.

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To meet these responsibilities, the Chief shall:

- (1) Provide advice, assistance, and direction to Regional, Area and ES Field Offices in the operational application of HEP.
- (2) Develop nationwide ES policy for the operational application of HEP.
- (3) Coordinate nationwide ES and related agency HEP training needs as determined and requested by the Regional Director. Schedule needed training in cooperation with the Chief, Office of Biological Services.
- (4) Identify HEP research and development needs, and assist in the planning and budgeting of such needs with the Office of Biological Services.
- (5) Establish quality control procedures to ensure field-level compliance with FWS and ES policies, regulations and procedures.
- (6) Provide Headquarters staff support for direct liaison with each Region and Area Office regarding the operational application of HEP to ensure a high level of technical adequacy, consistency in application, and compliance with ES and FWS procedures and policies.

C. Regional Director

Each FWS Regional Director shall provide staff support that is technically qualified and knowledgeable in the theory and use of HEP with the following responsibilities:

- (1) Ensure that Area and ES Field Office biologists clearly understand and apply the methodology of HEP in a consistent manner.
- (2) Provide guidance to Area and ES Field Offices on the application of HEP to projects and/or planning processes as per 100 ESM 1.4.
- (3) Coordinate regional training and technical assistance needs with ES Headquarters.
- (4) Resolve difficult operational problems within the Region.

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- (5) Insure the availability of computer equipment and necessary technical assistance in the use of computer software for the field biologists using HEP.
 - (6) Otherwise ensure efficient and uniform implementation of HEP throughout the Region.
 - (7) These responsibilities may be redelegated, subject to restrictions, to Area Managers in accordance with 4 AM 4.2E.
- D. Area Manager. The Area Manager shall be responsible for implementing HEP in his area of responsibility.
- E. ES Field Supervisor. The ES Field Supervisor shall carry out policies established by the Associate Director-Environment and shall implement the instructions of the Regional Director and Area Manager, including:
- (1) Determining which projects will undergo HEP analysis in compliance with guidance provided in 100 ESM 1.4, and other guidance provided at the Regional and Area level.
 - (2) Conducting actual field application of HEP.
 - (3) Ensuring that field biologists who use HEP are certified in the use of the 1980 edition of HEP prior to actual field application.
 - (4) Ensuring that field biologists who use HEP are also trained in the use of computer software and the performance of all calculations.
 - (5) Negotiating for conversion from 1976 to 1980 HEP for ongoing project investigations, if deemed justified.
 - (6) Identifying research needs and required refinements.
 - (7) Incorporating HEP data into Fish and Wildlife Coordination Act reports and other ES reporting activities.

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- F. Chief, Office of Biological Services (OBS). The Chief, Office of Biological Services has primary responsibility for the continued refinement of HEP in consultation with the Chief, Division of Ecological Services. OBS is also responsible for conducting the training and for special technical assistance to field personnel implementing these procedures, in coordination with the Chief, Division of Ecological Services.

These responsibilities have been delegated to the Western Energy and Land Use Team (WELUT) in Fort Collins, Colorado. Specifically, they include the following:

- (1) Jointly with ES, establish criteria to determine the effectiveness of HEP to meet field needs.
- (2) Conduct a technical analysis of HEP field applications, based on the results of the Corps-FWS Demonstration Program and on other studies.
- (3) Develop and maintain a training program for certification of biologists who will use the 1980 edition of HEP. This task will involve the development of HEP training curriculum and training materials (including use of computer software) and implementation of the training.
- (4) Provide technical assistance for demonstration studies and difficult problems referred by the Regional Offices.
- (5) Provide, through the normal chain of command, copies of available species data to ES Field Offices for use in the development of HSI models.
- (6) Develop and maintain the necessary HEP software for use in each Region, and provide technical assistance to Regions in implementing the software system.
- (7) In cooperation with ES, identify research needs and initiate studies to provide a basis for the continued refinement of the Habitat Evaluation Procedures. OBS is responsible for conducting HEP research and reporting results.

- 1.9 Forms. The use of the 1980 HEP requires a system of forms on which to enter basic information and in the absence of computer software, to record calculations. A set of master forms has been provided to all ES Field Offices. Upon completion of the Corps Demonstration Project, these forms will be revised to comply with the General Services Administration standard format for Federal government forms, and a new set of master forms will be distributed.

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1.10 Requisitioning Manuals and Availability of Forms.

- A. Requests for copies should be addressed to:

Chief
Division of Ecological Services
U.S. Fish and Wildlife Service
Department of the Interior
Washington, D.C. 20240

ATTN: Handbook Coordinator

- B. Copies of temporary forms issued with the 1980 edition of HEP will be made as needed by ES Field Offices, using master set provided. When the forms are revised, official FWS forms master sets will be provided to all ES Field Offices.

1.11 References.

- A. Bureau of Sport Fisheries and Wildlife, et al. 1971.
Action report: Conservation and enhancement of fish and wildlife in the national water resources program. Unpublished report 50 pp.
- B. Daniels, C. and R. Lemaire. 1974.
Evaluating effects of water resource developments on wildlife habitat. Wildlife Society Bulletin 2(3): 114-118.
- C. U.S. Fish and Wildlife Service, et al. 1974.
Ecological planning and evaluation procedures. Washington, D. C. 214 pp.
- D. U.S. Fish and Wildlife Service. 1976.
Habitat evaluation procedures. Division of Ecological Services. Washington, D. C., vi + 30 pp.
- E. Water Resources Council. 1973.
Principles and standards and procedures for federal participation in water and related land resource planning and development. Federal Register. Volume 38. Number 174. Part III, September 10, 1973.